

3 points discussed here :

1. do we have an “intrinsic” η dependance of the calorimeter responce to jets in a “good” η regions ?

“good” region: jet cone doesn’t see HB/HE and HE/HF gaps.

- qcd jets at $L=10^{33} \text{cm}^{-2}\text{s}^{-1}$ reconstructed with cone 0.5

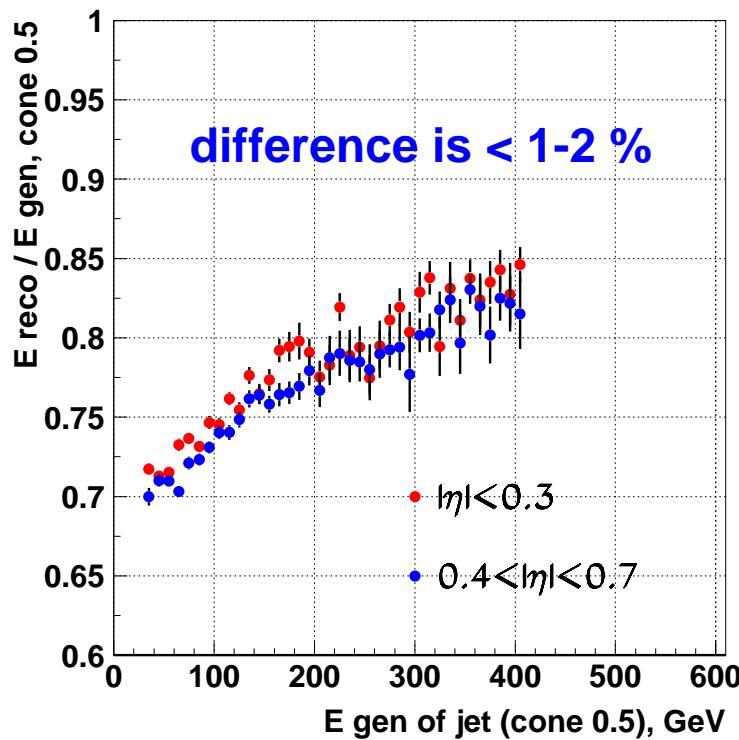
- $E_{\text{reco}} / E_{\text{gen}}$ is plotted for jet with $\Delta R(J_{\text{rec}}, J_{\text{gen}}) < 0.2$, $E_t^{\text{gen}} > 30 \text{ GeV}$

- present hcal calibration with pions of $Pt=50 \text{ GeV}$. mip in ecal

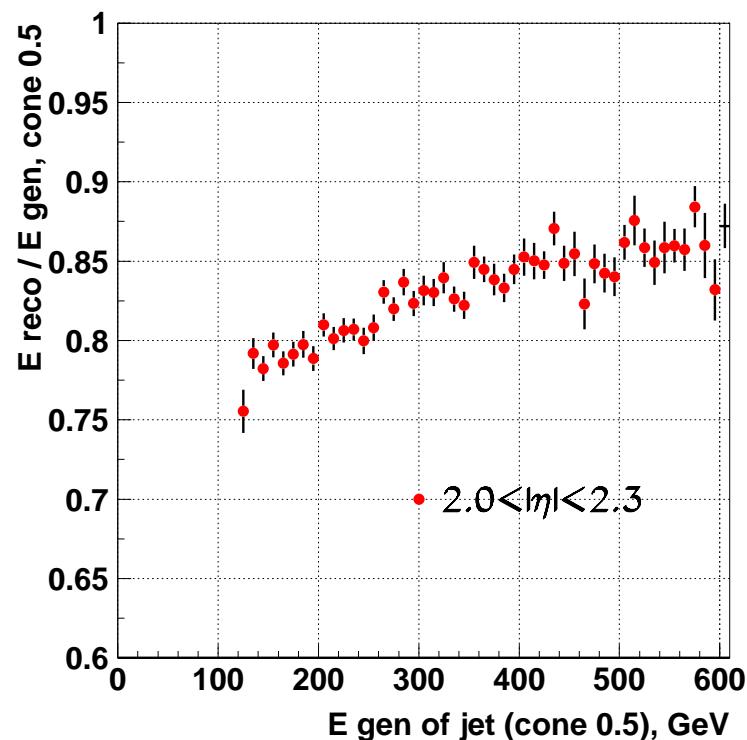
2. if a weighting of ecal and hcal fractions of jet energy can improve jet energy resolution (preliminary).

3. I again don’t see off-line QCD MET improvement now with 4-leading jet corrections ? ? ? ? ?

“good” region in HB

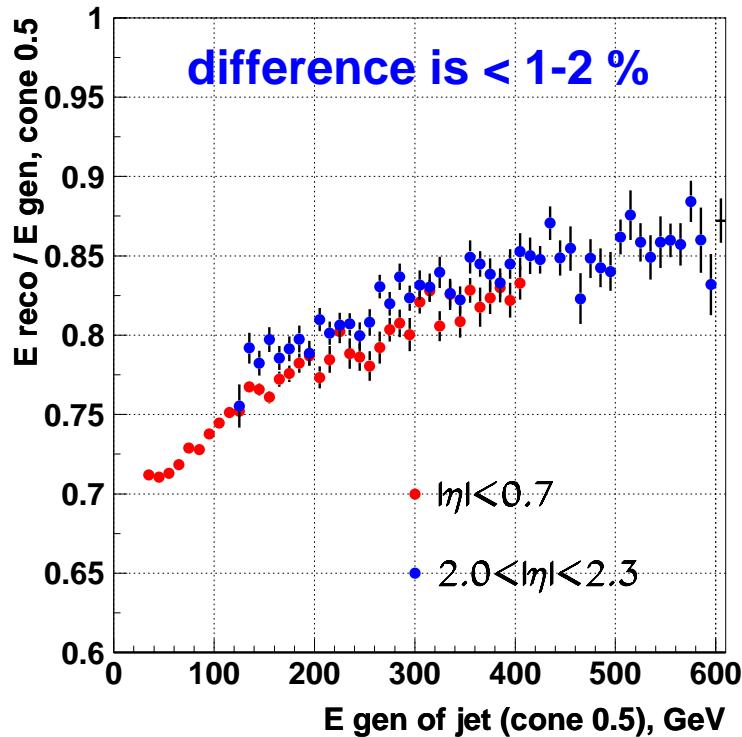


“good” region in HE

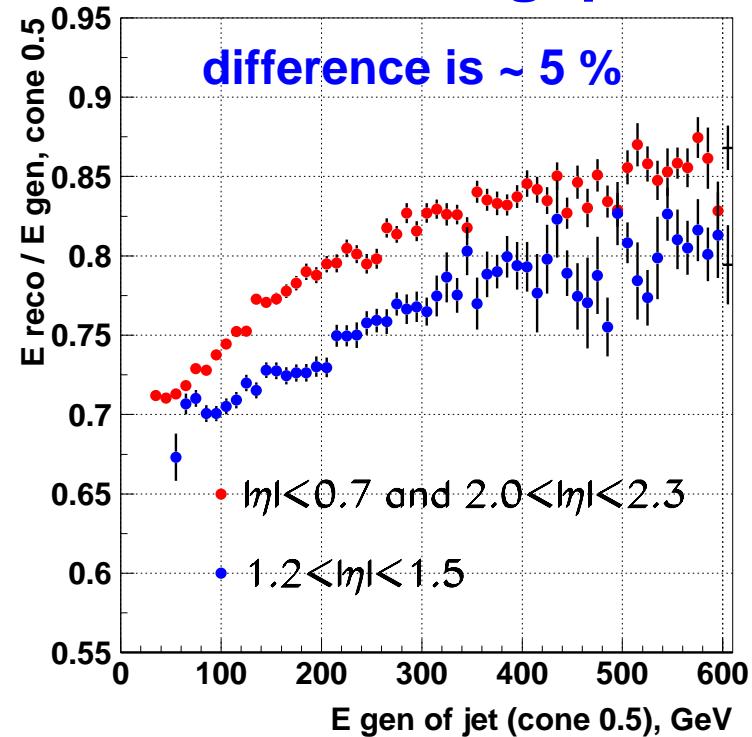


let's superimpose them on one plot -> next slide

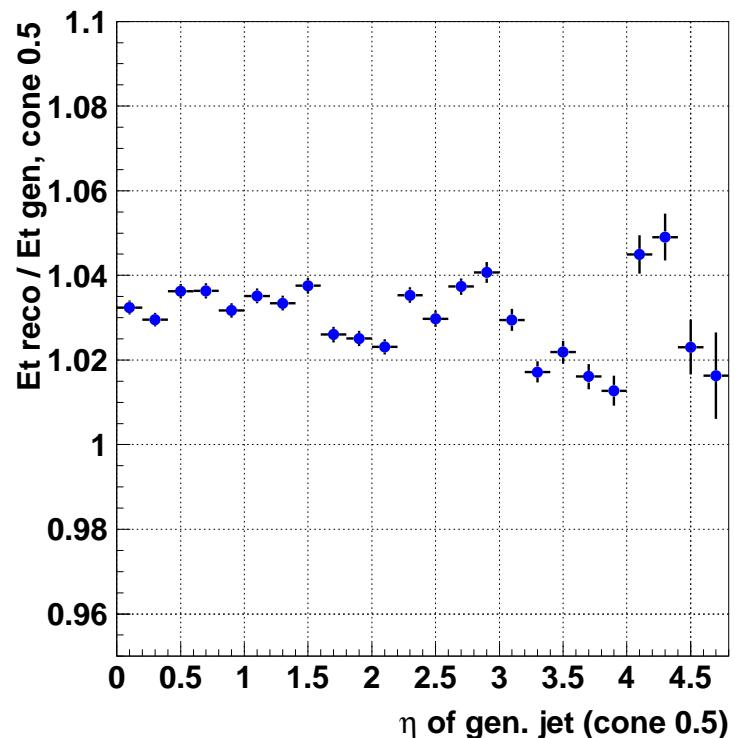
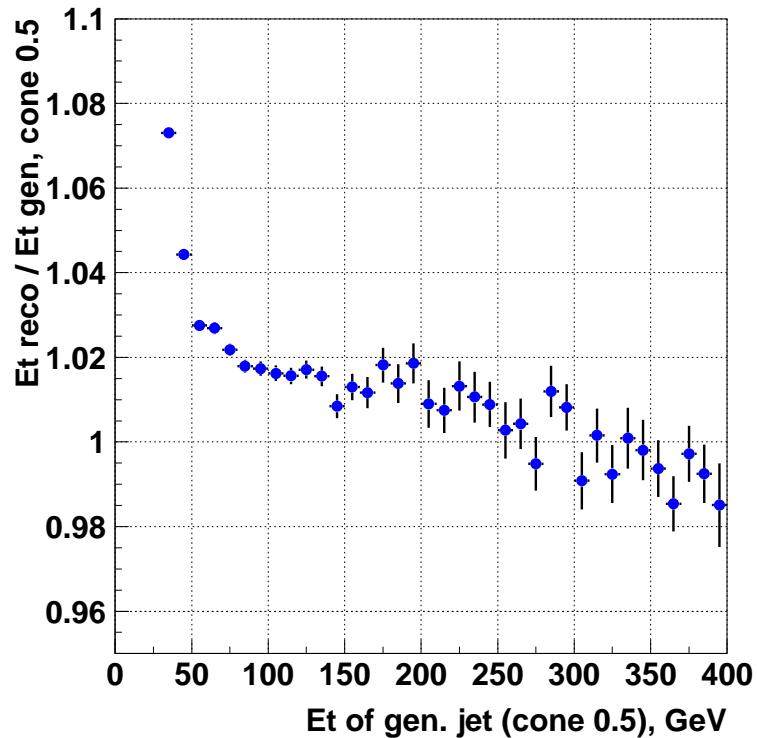
“good” HB/HE regions on one plot



“good” HB/HE regions and HB/HE gap



Silvia's No Pile up corrections with jets at Low Lumi

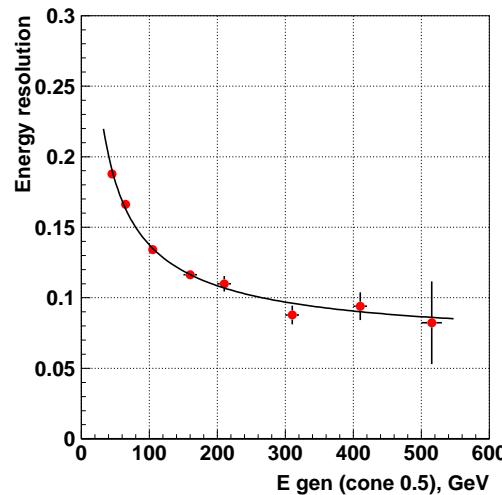


Energy resolution in “good” HB, HB/HE gap and “good” HE regions

$$\sigma = a / \sqrt{E} + b$$

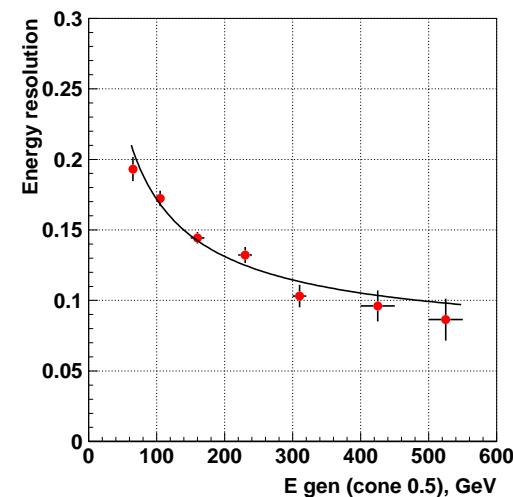
HB $\eta < 0.7$

a=1.19, b=0.07



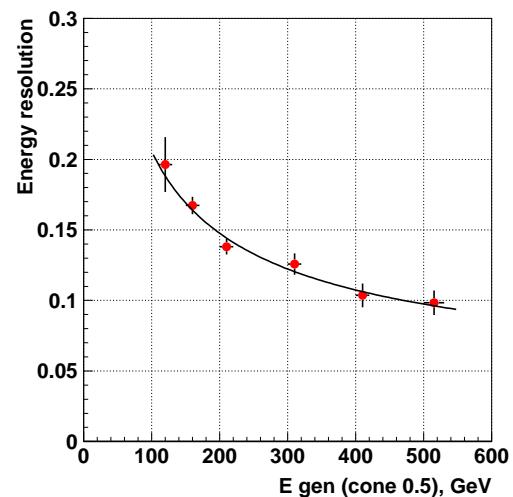
gap $1.2 < \eta < 1.5$

a=1.56, b=0.07



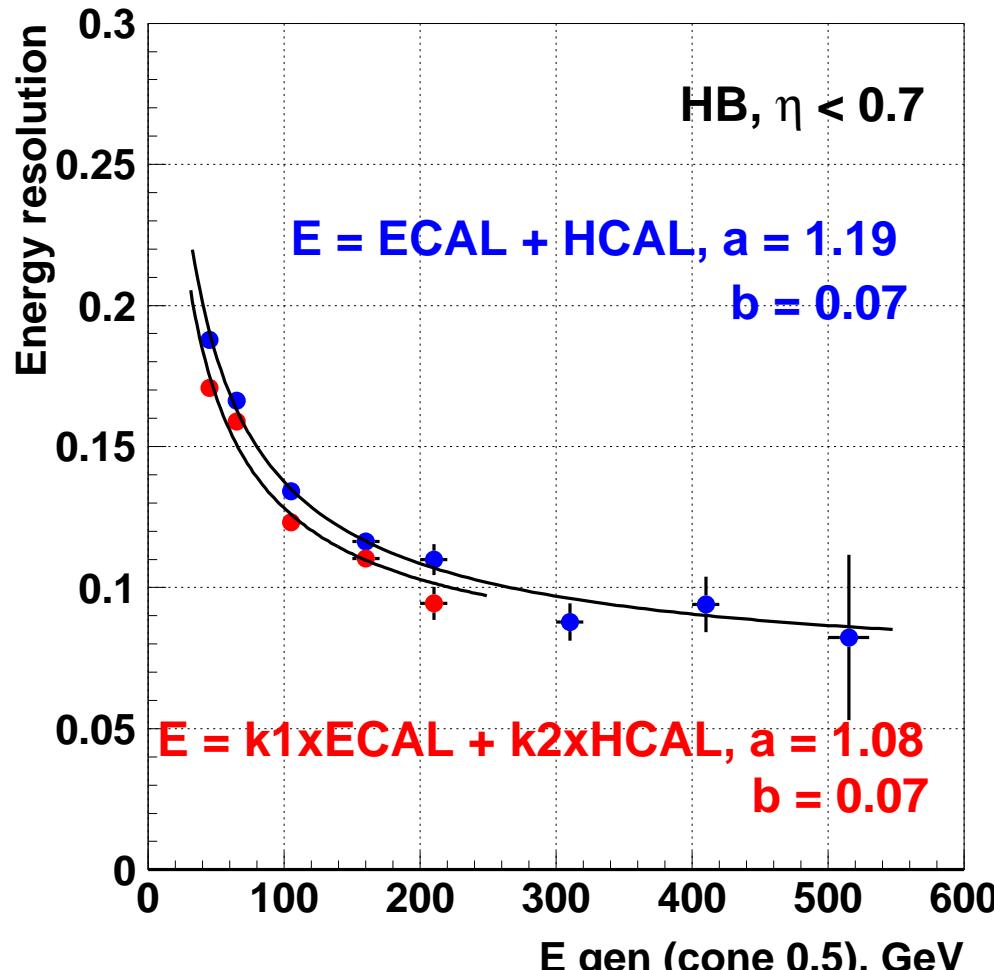
HE $2.0 < \eta < 2.3$

a=2.02, b=0.04



Attempt to improve jet energy resolution with simple ecal/hcal weighting :

$$E = k1 \times ECAL + k2 \times HCAL$$

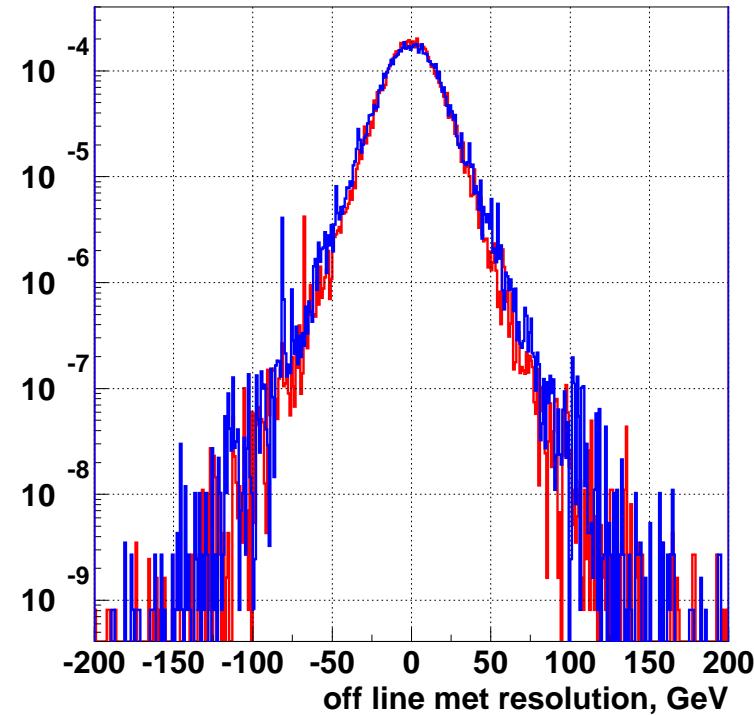
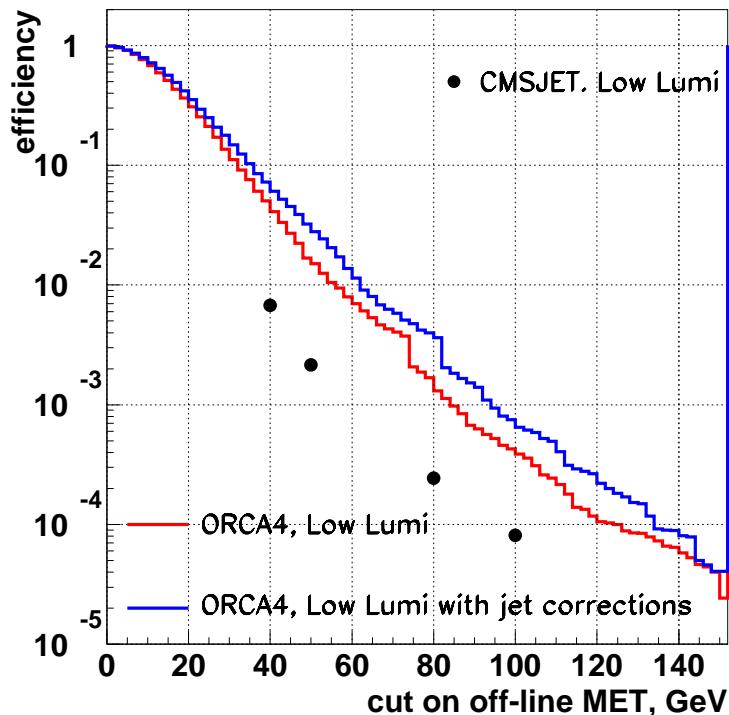


not a big gain . . .

I still don't see improvement of off-line QCD MET with Jet corrections
for 4 leading Jets of $E_t > 30$ (20) GeV

2 jets $E_t^{\text{reco}} > 60$ GeV in the event are required

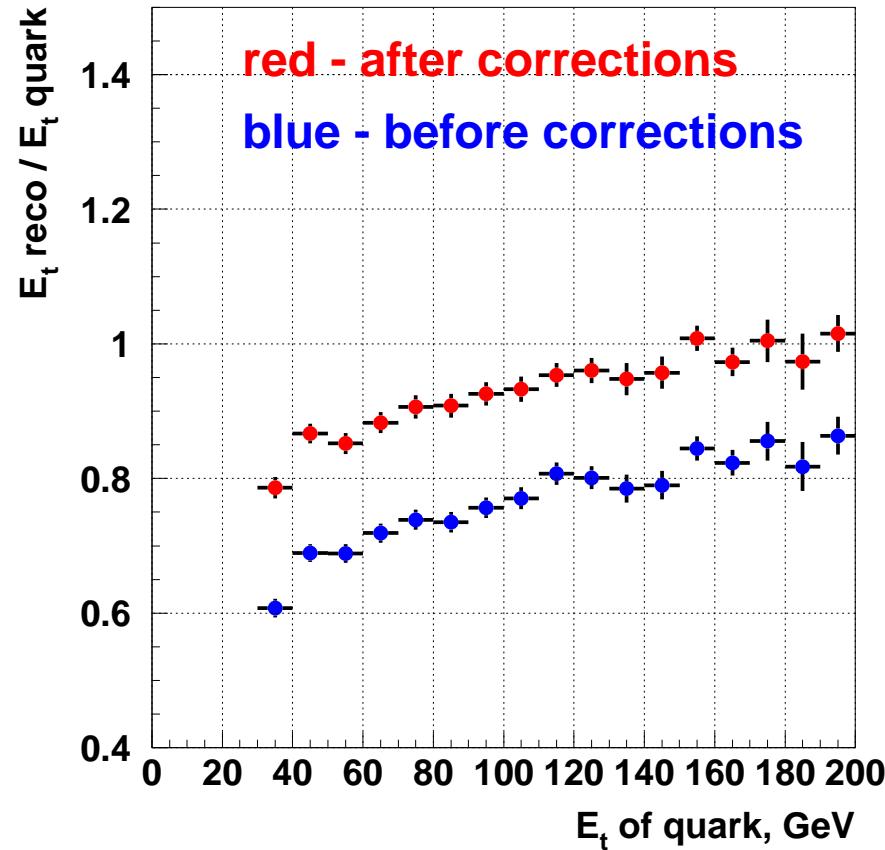
red - no corrections, blue - with corrections from 4 leading E_t jets



if someone can check . . .

may be next slide can explain =>

Silvia's No Pileup corrections applied for quark from qq->qqH at Low Lumi



Energy of jet outside fixed cone 0.5 is not corrected and it's important
for soft E_t jets / partons